

NOTEWORTHY SPERMATOPHYTES FROM MEXICO & CENTRAL AMERICA (a)

C. L. Lundell

CROTON CHICHENENSIS Lundell, sp. nov.

Frutex, albido-tomentosus. Petioli 0.6--2 cm. longi. Lamina chartacea, minute serrulato-denticulata, lanceolato-oblonga vel ovato-lanceolata, apice acuta vel acuminata, mucronulata, basi subcordata, supra stellato-pilosa, subtus albido-tomentosa. Inflorescentiae unisexuales. Flores ♀ sessiles vel subsessiles; calyx 2--2.5 mm. longo, lobis triangularibus. Flores ♂ pedicellati; calyce 3 mm. longo; staminibus 18. Capsula stellato-tomentosa.

A shrub, 1 m. high, with amber colored sap, whitish or pale tawny tomentose with stellate hairs. Branchlets slender, angled. Stipules inconspicuous, subulate, up to 3 mm. long. Petioles 0.6 to 2 cm. long. Leaf blades chartaceous, minutely serrulate-denticulate, lanceolate-oblong or ovate-lanceolate, 3 to 8.5 cm. long, 1.1 to 3 cm. wide, apex acute or acuminate, mucronulate, base subcordate, finely stellate-pubescent above, whitish tomentose beneath, pinnately veined, costa and veins slightly impressed above, conspicuous beneath. Racemes unisexual, terminal, tomentose, the staminate up to 13 cm. long, the pistillate spicate, congested, up to 3 cm. long. Pistillate flowers sessile or subsessile; calyx 2 to 2.5 mm. long, 5-lobed, the lobes triangular or triangular-lanceolate, glabrous within; petals sometimes developed and resembling calyx lobes, sometimes vestigial; ovary stellate-tomentose; styles once-branched, practically glabrous on inner surfaces. Staminate flowers with pedicels up to 4 mm. long; calyx 3 mm. long, lobes ovate, glabrous within; petals oblanceolate-oblong, about 3 mm. long, ciliate, the hairs greatly elongated below middle, practically glabrous otherwise; stamens 18, filaments glabrous; receptacle pilose. Capsules tomentose.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 7326, collected in low second growth around the Sacred Cenote, Chichén Itzá, Yucatán, Mexico, May 30, 1938.

Allied to C. Cortesianus H.B.K.

CROTON PSEUDONIVEUS Lundell, sp. nov.

Arbor lepidota. Petioli 0.7--2.3 cm. longi. Lamina membranacea, repanda, ovata, apice subacuminata, obtusa, basi rotundata vel subtruncata. Inflorescentiae bisexuales, fasciculatae, usque ad 1.2 cm. longae. Flores ♀ pedicellati; calyce ca. 3 mm. longo, lobis ovatis. Flores ♂ pedicellati;

staminibus 10 vel 11.

Tree, 6 m. high, lepidote throughout. Branchlets slender. Petioles 0.7 to 2.3 cm. long, slender. Leaf blades membranaceous, repand, ovate, 5 to 8.5 cm. long, 3.2 to 7 cm. wide, apex obtuse, base rounded or subtruncate, 3- or 5-veined, rather sparsely lepidote on both surfaces, the scales silvery with red center. Racemes bisexual, fasciculate in the leaf axils, crowded, very short, up to 1.2 cm. long, bracts villous-ciliate. Pistillate flowers with pedicels about 2 mm. long; calyx about 3 mm. long, lobes ovate; petals 5, broadly obovate, clawed, 3 mm. long, villous-ciliate; ovary lepidote; styles 3, branched 3 or 4 times. Staminate flowers with pedicels 1.5 mm. long; stamens 10 or 11, filaments glabrous.

Type in the University of Michigan Herbarium, Ynes Mexia 921, collected in thorny coast jungle, alt. 5 m., at Los Labrados, Sinaloa, Mexico, Oct. 14, 1926; vernacular names "vara blanca" and "mueltilla".

Closely related to C. niveus Jacq. with which it has been confused.

CROTON TACANENSIS Lundell, sp. nov.

Arbuscula videtur, farinoso-stellato-tomentosa. Petioli 3--8 cm. longi. Lamina membranacea, subserrulata, ovata, apice acuminata, basi subtruncata, emarginata. Inflorescentiae bisexuales. Flores ♀ pedicellati; calyce 3 mm. longo, lobis lanceolato-oblongis. Flores ♂ pedicellati; staminibus 13--16.

Apparently a small tree, with loose farinose yellowish tomentum of stellate hairs, the central ray of hairs elongated and acicular on branchlets, petioles, and inflorescence. Petioles 3 to 8 cm. long, with a pair of stalked glands at apex beneath. Leaf blades membranaceous, ovate, 7 to 13 cm. long, 3.5 to 8 cm. wide, apex acuminate, base subtruncate, shallowly emarginate, the tomentum dense and persistent beneath, at length nearly glabrous above, farinose, margin subserrulate, base 3-veined. Racemes terminal, up to 20 cm. long, lower bracts subtending both staminate and pistillate flowers. Pistillate flowers with pedicels up to 3.5 mm. long; calyx 3 mm. long, deeply 5-lobed, lobes lanceolate-oblong; ovary stellate-hispid; styles bifid to base. Staminate flowers with pedicels up to 3 mm. long; calyx 2.5 mm. long; petals 5, oblanceolate, about 2.5 mm. long, villous; stamens 13 to 16, filaments villous below middle, receptacle villous.

Type in the University of Michigan Herbarium, Eizi Matuda 2943, collected at an altitude of 2100 m. on the north side of Volcán de Tacaná, Chiapas, Mexico, on April 2, 1939.

The species is a member of the complex of Croton gossypifolius Vahl.

CROTON TENUICAUDATUS Lundell, sp. nov.

Arbor, 18 m. alta, lepidota et hirtella. Fetioli usque ad 4.3 cm. longi. Lamina membranacea, integra, ovato-oblonga vel elliptico-oblonga, 10--16.5 cm. longa, 4.8--8 cm. lata, apice abrupte et obtuse caudato-acuminata, basi late rotundata. Inflorescentiae bisexuales, usque ad 16 cm. longae. Flores ♀ pedicellati, pedicello 4--7 mm. longo; calyce 3 mm. longo, lobis 5, ovatis; petalis 5; stylis 3. Flores ♂ pedicellati, pedicello 3--4 mm. longo; staminibus 12 vel 13.

A tree 18 m. high, densely ferruginous-lepidote and short hirtellous. Branchlets rather stout, angled. Petioles slender, up to 4.3 cm. long. Leaf blades membranaceous, entire, ovate-oblong or elliptic-oblong, 10 to 16.5 cm. long, 4.8 to 8 cm. wide, apex abruptly and obtusely caudate-acuminate, base broadly rounded, densely lepidote at first on both surfaces, glabrescent with age, eglandular, costa elevated beneath, pinnately veined, primary veins 8 or 9 pairs, rather conspicuous beneath. Racemes axillary and terminal, bisexual, up to 16 cm. long. Pistillate flowers with pedicels 4 to 7 mm. long; calyx 3 mm. long, 5-lobed, lobes ovate; petals 5, broadly spatulate, long-clawed, up to 3.5 mm. long, lepidote without, pilose within, villous-ciliate; ovary lepidote; styles 3, each branched 4 times. Staminate flowers with pedicels 3 to 4 mm. long; calyx 3.2 mm. long, lobes ovate; petals 5, up to 4 mm. long; stamens 12 or 13, filaments sparsely pilose, up to 5 mm. long; receptacle pilose.

Type in the University of Michigan Herbarium, Alexander F. Skutch 2575, collected in open woods, vicinity of El General, Prov. San José, Costa Rica, alt. 825 m., Feb. 1936.

Referable to the complex of C. glabellus L.

PERROTTETIA COSTARICENSIS Lundell, nom. nov.

Perrottetia racemosa Standl., Field Mus. Bot. 18: 633. 1937, not P. racemosa Loes.

PERROTTETIA SESSILIFLORA Lundell, sp. nov.

Arbor, ramulis glabris. Fetioli 6--10 mm. longi. Lamina integra, chartacea, lanceolato-oblonga, apice caudato-acuminata, basi rotundata et acutiuscula. Inflorescentiae ♀ paniculatae, flavo-puberulae. Flores sessiles vel subsessiles, puberuli, ca. 1 mm. longi.

Tree, 8 m. high, branchlets slender, glabrous. Petioles 6 to 10 mm. long. Leaf blades entire, lanceolate-oblong, 10.5 to 16 cm. long, 3.6 to 5.8 cm. wide, apex caudate-acuminate, base rounded and acutish, thinly chartaceous, barbate in the axils beneath, otherwise entirely glabrous, primary veins 7 to 10 on each side, the costa and veins conspicuous beneath. Inflorescence paniculate, axillary, the panicles much-branched, subsessile, up to 7.5 cm. long,

9 cm. wide, densely yellowish-puberulent. Pistillate flowers minute, about 1 mm. long, greenish-yellow, crowded, sessile or subsessile, puberulent. Calyx lobes about 0.4 mm. long, acutish. Petals triangular, acute, about 0.6 mm. long, glabrous inside. Stamens shorter than petals, inserted on margin of thin shallow disk. Ovary free, glabrous, depressed-globose, 2-celled, with 2 erect ovules in each cell; style slightly longer than ovary; stigma shallowly bifid. Staminate flowers and fruits unknown.

Type in the University of Michigan Herbarium, Alexander F. Skutch 2325, collected in vicinity of El General, Prov. San José, Costa Rica, alt. 915 m., December 1935. Duplicate in United States National Herbarium (no. 1642337).

This remarkably distinct species has entire leaves and sessile or subsessile flowers.

GUNNERA KILLIPIANA Lundell, sp. nov.

Herba perennis. Folia adpresse hirsuta, scabrida, cordato-rotundata, lobata et dentata. Inflorescentiae adpresse hirsutae, spicae usque ad 1.8 cm. longae, bracteeae fimbriatae, usque ad 1.8 cm. longae. Fructus ovoideus.

Coarse perennial herb, scabrid. Leaves long-stalked, large, cordate-rounded, palmately lobed, dentate, the teeth acute or acuminate, the longest ones up to 8 mm. long, both surfaces scabrid, the upper at first densely hirsute with short stout appressed brownish hairs, the under surface hirsute only along the veins, palmately veined, the veins prominent beneath. Inflorescence densely subappressed hirsute, the fertile part 25 cm. long. Flowers in compact short-stalked spikes up to 1.8 cm. long, each spike subtended by a subequal bract; calyx lobes up to 1.2 mm. long, with long filiform tip, the filiform part deciduous early; petals sparsely hirsute, deciduous early. Infructescence long-stalked, the fertile part up to 75 cm. long, the spikes up to 9 cm. long, hirsute; bract at base of spike lanceolate, oblong or oblanceolate, up to 1.8 cm. long, appressed-hirsute, fimbriate. Fruits (immature) glabrous, sessile, ovoid, about 2 mm. long including persistent part of calyx lobes.

Type in the University of Michigan Herbarium, Eizi Matuda 2763, collected at alt. of 1400 m. on Volcán de Tacaná, Chiapas, Mexico, March 17--23, 1939.

Mr. E. P. Killip was first to recognize the plant as a distinct species, and it is with pleasure that I dedicate it to him. *Gunnera Killipiana* is near to *G. insignis* (Oerst.) A. DC. *Gunnera mexicana* Brandeg., the only other Mexican species, is known to the writer from the brief original description only. It apparently differs from *G. Killipiana* amply in its leaf form being attenuate at the base

rather than deeply cordate.

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(a) Papers from the University of Michigan Herbarium.

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NOVELTIES AMONG THE AMERICAN VERBENACEAE

Harold N. Moldenke

Continued studies in the herbarium of the New York Botanical Garden and elsewhere have brought to light a good many as yet undescribed novelties in the *Verbenaceae*, some of which are presented herewith. More complete and detailed descriptions, as well as discussion of relationship and citation of specimens examined, will be found in the author's forthcoming generic monographs.

LIPPIA GEHRTII Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus dense albido-hispidis; nodis plusminus annulatis; foliis oppositis; petioliis alato-marginatis dense albido-hispidis; laminis chartaceis late ellipticis vel subovatis, ad apicem rotundatis, ad basim truncatis vel subtruncatis, regulariter serrato-dentatis utrinque albido-hirsutis.

Shrub; branches and branchlets slender, obtusely tetragonal, densely hispid with harsh white divergent hair 2.5--3 mm. long; nodes hidden, but apparently more or less annulate; principal internodes 0.9--3 cm. long; leaves decussate-opposite; petioles slender, 3--7 mm. long, canaliculate above, more or less wing-margined, densely white-hispid like the branchlets; blades chartaceous, rather uniformly dark-green on both surfaces, broadly elliptic or subovate, 1--4 cm. long, 0.7--3.2 cm. wide, rounded at apex, regularly serrate-dentate from base to apex with rounded or subacute, broad, short teeth, truncate or subtruncate at base (varying to acuminate and prolonged into the petiole on young twigs), abundantly hirsute on both surfaces with long white hair similar to that on the branchlets; midrib slender, impressed above, prominent beneath; secondaries slender, 4--6 per side, arcuate-ascending, impressed above, prominulous beneath; veinlet reticulation abundant, impressed above, prominulous beneath; inflorescence borne in terminal open panicles, consisting of 2 or 3 (or more) decussate pairs of stipitate heads and a sessile terminal one, the stipitate